

CLAIMS

Claims 1 - 5. (Cancelled).

6. (Previously Presented) A production method for a purification catalyst for exhaust gas, wherein Pd and PdO are supported on an Al oxide and the Al oxide is LnAlO_3 (Ln: rare-earth metal) generated as a single phase and trigonal or rhombohedral, the method comprising:

preparing at least one kind of compound selected from a group of compounds of carboxylic acid having a hydroxyl group or a mercapto group and having a carbon number of 2 to 20, dicarboxylic acid having a carbon number of 2 or 3, and monocarboxylic acid having a carbon number of 1 to 20; and

adding at least one compound selected from the group to an aqueous nitrate solution including Ln and Al component.

7. (Previously Presented) The production method for a purification catalyst for exhaust gas according to claim 6, the method comprising:

evaporating the aqueous nitrate solution completely to produce a carboxylic acid complex polymer; and

heating the carboxylic acid complex polymer.

8. (Original) The production method for a purification catalyst for exhaust gas according to claim 7, wherein a heating temperature in the heating of the carboxylic acid complex polymer is not more than 1000°C.

Claims 9 - 10. (Cancelled).

11. (Previously Presented) A purification catalyst for exhaust gas, according to claim 12, wherein the catalyst is produced by adding at least one kind of compound selected from the group of compounds of carboxylic acid having a hydroxyl group or a mercapto group and having a carbon number of 2 to 20, dicarboxylic acid having a carbon number of 2 or 3, and monocarboxylic acid having a carbon number of 1 to 20 to aqueous nitrate solution including Ln and Al.

12. (Previously Presented) A purification catalyst for exhaust gas comprising an Al oxide supporting Pd and PdO, where the AlO is (Ln: rare-earth) generated as a single phase and trigonal or rhombohedral.

13. (Previously Presented) The purification catalyst for exhaust gas according to claim 11, wherein the catalyst is produced by evaporating the aqueous nitrate solution completely, to produce a carboxylic acid complex polymer and heating the carboxylic acid complex polymer.

14. (Previously Presented) The purification catalyst for exhaust gas according to claim 13, wherein Pd is supported on LnAlO_3 in which Ln is a rare-earth metal, and an oxidation state of Pd in a surface supporting Pd is a state of Pd^{2+} .

15. (Previously Presented) A Purification catalyst equipment for exhaust gas, comprising the purification catalyst for exhaust gas according to claim 11 or 12.

16. (Previously Presented) The purification catalyst for exhaust gas according to claim 12, wherein the purification catalyst is a powder having a surface-to-weight ratio of

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8 m² or more.

17. (Previously Presented) The purification catalyst for exhaust gas according to claim 13, wherein the carboxylic acid is malic acid.